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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/804,171

03/19/2004

Sung Hea Cho

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21171 7590 02/28/2007  
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EXAMINER

DUFF, DOUGLAS J

ART UNIT

PAPER NUMBER

3748

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/28/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/804,171

Applicant(s)

CHO ET AL.

Examiner

Douglas J. Duff

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,8,11 and 12 is/are rejected.
- 7) ☒ Claim(s) 2,5-7,9 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/19/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loprete (US 6132177) in view of Nagae (US 6024547). Regarding claim 1, Loprete discloses a variable capacity rotary compressor comprising a housing (72) defined therein with first and second compressing chambers (32, 34) having different volumes (col. 4, lines 37-39); a rotating shaft (42) adapted to rotate in the first and second compressing chambers; a compressing unit arranged in the first and second compressing chambers (62), and adapted to perform a compression operation in a selected one of the first and second compressing chambers in accordance with a change of a rotating direction of the rotating shaft (Figs. 1-4) and a drive motor (70) adapted to rotate the rotating shaft in a first direction or in a second direction (Abstract).
3. Loprete fails to disclose a drive motor being variable in rotating speed in accordance with an electrical control operation.
4. Nagae discloses a variable capacity rotary compressor with a drive motor being variable in rotating speed in accordance with an electrical control operation (col. 1, lines 17-20). It would have been obvious for a person having ordinary skill in the art at the time the invention was made to utilize a drive motor being variable in rotating speed in

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accordance with an electrical control operation in order to control the capacity of the compressor (col. 1, line 20).

5. Regarding claim 4, the modified Loprete invention discloses the variable capacity rotary compressor as described in the rejection of claim 1, and further discloses a drive motor being an inverter motor (col. 1, lines 17-18). It would have been obvious for a person having ordinary skill in the art at the time the invention was made to utilize an inverter motor as the drive motor in order to linearly control the driving rotational speed and capacity of the compressor (col. 1, lines 17-20).

6. Regarding claim 8, Loprete discloses a variable capacity rotary compressor comprising a housing (72) defined therein with first and second compressing chambers (32, 34) having different volumes (col. 4, lines 37-39); a rotating shaft (42) adapted to rotate in the first and second compressing chambers; first and second sleeves (48, 50, 58) respectively arranged in the first and second compressing chambers (62); an eccentric unit (64) mounted on the rotating shaft, and adapted to operate the first and second sleeves such that one of the first and second sleeves rotates in an eccentric state when the rotating shaft rotates in a first direction, thereby performing a compression operation, while the other sleeve idly rotates during the compression operation (col. 4, lines 37-39), whereas, when the rotating shaft rotates in a second direction, the first and second sleeves perform operations opposite to the operations carried out when the rotating shaft rotates in the first direction, respectively; and a drive motor (70) adapted to rotate the rotating shaft in a first direction or in a second direction.

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7. Loprete fails to disclose a drive motor being variable in rotating speed in accordance with an electrical control operation. Nagae discloses a drive motor being variable in rotating speed in accordance with an electrical control operation.
8. Regarding claim 12, the modified Loprete invention discloses the variable capacity rotary compressor as recited in the rejection of claim 8, and additionally discloses a drive motor being an inverter motor.
9. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loprete in view of Nagae as shown in the rejection of claims 1 and 8 above, and further in view of Weber (US 5780990). The modified Loprete device discloses the variable capacity rotary compressor as described in the rejection of claims 1 and 8 above, but fails to disclose the drive motor being a brushless DC motor.
10. Weber discloses a compressor where the drive motor is a brushless DC motor (col. 3, lines 39-47). It would have been obvious for a person having ordinary skill in the art at the time the invention was made to utilize a brushless DC motor in a compressor in order to run the compressor at higher speeds (col. 3, lines 45-46).

***Allowable Subject Matter***

11. Claims 2, 5-7, 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas J. Duff whose telephone number is (571) 272-3459. The examiner can normally be reached on M-F 7 AM - 5 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Douglas J. Duff



2/22/07

  
THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
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